

DESIGN AND CONSTRUCTION GUIDELINES AND STANDARDS

DIVISION 9 • FINISHES

09 20 00 • GYPSUM DRYWALL

SECTION INCLUDES

Gypsum Board
Light Gauge Metal Framing
Exterior Gypsum Sheathing
Backerboard
Veneer Plaster (Filed Sub-Bid)
Trim Accessories
Acoustical Sealant
Auxiliary Materials

RELATED SECTIONS

02 06 00 Building Demolition
04 20 00 Masonry
05 10 00 Structural Steel
06 01 00 Rough Carpentry
06 20 00 Finish Carpentry
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07 11 00 Waterproofing and Dampproofing
07 20 00 Building Insulation
07 40 00 Siding
07 90 00 Sealants
08 11 00 Doors and Frames
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TECHNICAL STANDARDS

Gypsum Association Representing manufacturers of gypsum board in the US and Canada www.gypsum.org
Drywall Information Trust Fund of California www.drywallca.com
Drywall Recycling www.drywallrecycling.org
USG Installation and Application Guides www.usg.com

GYPSUM BOARD

MATERIALS

Interior Gypsum Board complying with ASTM C 36/C36M or ASTM 1396C 1396M. Water-resistant gypsum board and fire-rated water resistant gypsum board complying with ASTM C 630.

Gypsum wallboard manufactureres include American Gypsum, CertainTeed Gypsum, United States Gypsum (USG), National Gypsum and Georgia-Pacific Gypsum.

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Gypsum board manufacturers have several different types of gypsum wall board including standard (white board), fire rated (type X), acoustically enhanced, water resistant (green board MR), plaster base gypsum board (blue board) and mold resistant.

All gypsum drywall panels come in standard sizes but custom sizes are available for large orders. Thickness of gypsum board varies from from 1/4 to 1 inch. Most building codes mandate either 1/2 or 5/8 inch drywall for single-thickness applications. Thinner 1/4 and 3/8 inch to be used to cover existing walls and ceilings. Standard drywall works well in most situations but codes may require Type X or Type MR for certain applications.

Moisture resistant type gypsum wall board (green board) is not recommended in bathroom and laundry areas. Use Densglass or Aquatech by Gold Bond in these areas. Use tile backerboard such as Wonderboard or Durock around tub and shower enclosures.

Use a patching plaster or caulk to fill the gap between the rough floor and the bottom of the drywall for air sealing, to keep bugs out, and to provide a backing for the vinyl base.

Use paper joint tape for interior gypsum wallboard.

Joint compound for prefilling shall be interior gypsum board setting-type taping compound. Embedding, first, second & third coats shall be drying-type, all purpose joint compound.

DESIGN

When designing drywall assemblies for wall types, determine what the fire rating requirements may be, any wet locations, sound deadening requirements and the total wall construction.

Use cement board behind tile in bathrooms and DensArmor Plus paperless gypsum board smooth finish everywhere else in the bathroom. Blue board with skim coat of plaster may be used on ceilings. Install cement board full height on walls to receive ceramic tile or solid surfacing.

In DMR group homes install blue board with skim coat on walls and ceilings to provide a more durable surface.

Use fire rated Type X gypsum drywall assemblies for rated walls and shaft walls.

EXECUTION

Fasten all gypsum drywall with screws, not nails at 16" on center for wall and 12" on center for ceilings. Install drywall horizontally on walls for ease of installation. Attach corner beads with screws, do not clinch. Install expansion joints as shown on the drawings on walls and ceilings.

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On larger drywall jobs the Contractor should be directed to follow the Construction and Demolition Waste Management plan described in the specifications.

There are several levels of gypsum board finish that can be specified. The minimum level of finish required is for all joints and interior angles to have tape embedded in joint compound and two coats of joint compound applied over all joints, angles, fastener heads and accessories.

However, in certain locations the level of finish can be reduced for all joints and interior angles to have tape embedded in joint compound only which is referred to as "fire taping".

LIGHT GAUGE METAL FRAMING

MATERIALS

Manufacturers of steel framing and furring include Clark Steel Framing, Consolidated Systems, Dale Industries, National Gypsum and Gold Bond Building Products.

Steel framing members for walls and partitions within 10 feet of exterior walls must have a protective hot-dip galvanized coating meeting the requirements of ASTM A653, G 40.

Steel studs and runners shall comply with ASTM C645 with a thickness of 0.0329 inch (20 gauge) and a depth of 3-5/8 inch.

Deflection track shall be manufacturer's top runner complying with the requirements of ASTM C645 and with 2 inch deep flanges.

Shaft wall studs and runners shall have a protective hot-dip galvanized coating meeting the requirements of ASTM A653, G 40. Studs, track (runner) and jamb struts shall have a minimum thickness of 0.0329 inch (20 gauge).

Steel rigid furring channels shall be hat shaped meeting the requirements of ASTM C645 and have a thickness of 0.0179 inch (25 gauge) and a depth of 7/8 inch.

Furring brackets shall be serrated-arm type, adjustable, fabricated from corrosion-resistant steel sheet complying with ASTM C645 and have a minimum thickness of base metal of 0.0329 inch (20 gauge) designed for screw attachment to steel studs and steel rigid furring channels used for furring.

Z-Furring members shall have a slotted or nonslotted web fabricated from steel sheet complying with ASTM A653 with a thickness of 0.0179 inch (25 gauge), face flange of 1-1/4 inch, wall-attachment flange of 7/8 inch and a depth required to fit insulation thickness indicated.

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Steel channel bridging shall be cold-rolled steel, 0.0598 inch (16 gauge) minimum thickness, 7/16 inch wide flanges and 1-1/2 inch deep.

Steel flat strap and backing plate shall be made of sheet steel complying with ASTM A653 or ASTM A568 and a minimum base thickness of 0.0179 inch (25 gauge).

Fasteners for metal framing shall be of the type, material, size, quantity, corrosion resistance, holding power and other properties to fasten steel framing and furring members securely to substrates and complying with the recommendations of the gypsum board manufacturers for applications indicated.

EXECUTION

Install steel framing to comply with ASTM C754 and with ASTM C840 requirements that apply to framing installation. Install supplementary framing, blocking, and bracing at terminations in gypsum board assemblies to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings or similar construction. Install runners at floors, ceilings and structural walls and columns where gypsum board stud assemblies abut other construction. Wood blocking and nested studs should be installed at door and window openings and in locations to receive wood trim.

EXTERIOR GYPSUM SHEATHING

MATERIALS

Exterior gypsum sheathing is manufactured to meet the requirements of ASTM C 1396/C 79.

Exterior gypsum sheathing can be a water resistant gypsum board product with a treated core such as Gold Bond Brand Gypsum Sheathing by National Gypsum or a paperless product with a treated core such as Paperless DenGlass Gold Exterior Sheathing by Georgia-Pacific. ProRoc and GlasRoc by CertainTeed is another weather-resistant product which is an appropriate substrate in Exterior Insulation and Finish Systems (EIFS), stucco systems and traditional cladding systems.

DESIGN

Exterior gypsum sheathing can be used with either wood or steel framing wall systems to support, stucco, brick veneer, cement and with EIFS. Advantage of gypsum sheathing over plywood sheathing are water resistant and fire rating. Exterior gypsum sheathing is not recommended for wood frame commercial buildings over 3 stories.

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EXECUTION

Install exterior gypsum sheathing according to manufacturers recommendations for the exterior wall cladding system. Gypsum exterior sheathing is designed for use as a substrate that is covered by an exterior wall cladding system. Exterior gypsum sheathing can be left exposed for up to one month but treated core gypsum sheathing should be covered immediately with a weather-resistive barrier such as building felt or equivalent. For other specific weather resistive barrier requirements, consult the building code or cladding manufacturer.

BACKER BOARD

DESIGN

Although backer board may be specified in the Gypsum Board Specification section it is preferred to have it included in the Tile section (which is typically a field sub trade).

Backer board is recommended in bathrooms behind tile in tub shower surrounds and walk-in showers. Follow manufacturers design details and shower details from the Tile Council of America (TCA) *Handbook for Ceramic Tile Installation*.

Backer board or abuse-resistant gypsum interior panels can also be used in areas where impact resistance is a concern where standard interior gypsum drywall will not hold up. Backer board or abuse-resistant gypsum interior panels are recommended in corridors of fully accessible units or group homes where contact with wheelchairs is a concern.

MATERIALS

Cementitious backer board units must comply with ANSI A108.1 & A118.9 and to ASTM D3273 for mold resistance.

There are four acceptable manufacturers of tile backerboard: Wonderboard by Modulars Inc. DenShield by Georgia-Pacific, Cement Board by James Hardie or Durock by USG. Wonderboard, James Hardie Cement Board and Durock are all cementitious board products. DenShield is a paperless tile backer with glass mats on the front and back sides and a proprietary water-resistant treated core and meets ASTM C 1178. Most of these backerboards are available in ¼" and ½" and some in 7/16" or 5/8" thicknesses. Thickness of backer board should match the drywall thickness used in the room for a smooth transition between adjoining materials. Coordinate backerboard section with tile section of the specifications.

Use 2" wide, alkali resistant, polymer-coated glass fiber mesh for cover for cementitious backerboard units and for high-density core backerboard.

Joint compound for cementitious backer units shall be a latex-fortified Portland cement mortar.

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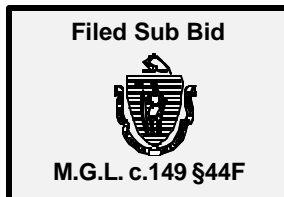
EXECUTION

In wet areas, install tile on cementitious backerboard and follow manufacturer installation recommendations. Extend tile with cement backerboard 6 inches past tub.

Apply glass fiber mesh joint tape and latex-fortified Portland cement mortar on cement backerboard as recommended by manufacturer.

DO NOT use drywall compound on Durock or Wonderboard.

VENEER PLASTER



Plaster and Stucco are stipulated filed sub-bid categories under M.G.L. Chapter 149, §44F. If the cumulative estimated value of the work in this section exceeds \$20,000 and the project total cost is \$100,000.00 or greater, it triggers the filed sub-bid requirement.

MATERIALS

When using a veneer plaster finish use plaster based gypsum board (blue board) as the wall or ceiling underlayment such as Imperial Board by USG.

Veneer plaster shall be regular strength or high strength finish plaster, either one-coat meeting ASTM C 587.

Plaster surfaces offered better joint concealment, fewer nail pops, a hard monolithic surface which could be easily decorated, and plaster was more quickly finished than drywall.

DESIGN

Veneer plaster finishes offer two distinct advantages over drywall - dust and money. Dust is kept to a minimum with these products. The veneer plaster is applied in a wet state and troweled to a smooth surface. No sanding is required.

Textured plaster finish is not recommended on new work due to product failure and surface peeling after repeated applications of paint over ceiling coating during building rehab.

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EXECUTION

Fasten blue board gypsum drywall with screws, not nails at 12" on center.

Apply Plaster in a thin coat directly over the gypsum panel. The plaster thickness usually ranges between 1/16th to 3/32nd of an inch. Follow installation standard of ASTM C 843.

TRIM ACCESSORIES

MATERIALS

Trim accessories includes corner beads, edge trim, LC-Beads, L-Beads, U-Beads and control joints complying with ASTM C 1047. Acceptable material for trim accessories shall be steel sheet steel zinc coated hot-dip process or rolled zinc.

DESIGN

In buildings with where wheelchairs will be used, protect all corners with corner trim guards.

EXECUTION

Fasten trim accessories with back flanges to framing with the same fasteners use to fasten gypsum board.

Install edge trim where the edge of gypsum board panels would otherwise be exposed.

Corner beads are to be installed on outside corners, unless otherwise indicated. Use mesh tape across back edges for corner beads.

LC-bead with both face and back flanges, face flange formed to receive joint compound. Use LC-beads for edge trim.

L-bead with face flange only, face flanged formed to receive joint compound. Use L-bead where indicated.

U-bead with face and back flanges, face flange formed to be left without application of joint compound. Use U-bead where indicated.

Use one piece control joint formed with V-shaped slot and removable strip covering slot opening.

Nails are not allowed for applying trim accessories to gypsum board.

LC-bead used at exposed gypsum board panel edges.

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ACOUSTICAL SEALANT

MATERIALS

Acoustical sealant for exposed and concealed joints should be nonsag, paintable and nonstaining latex sealant complying with ASTM C 834. The sealant to have flame-spread and smoke-developed ratings of less than 25 per ASTM E 84.

EXECUTION

Seal all joints between acoustical partitions work and adjoining gypsum drywall panels. Seal perimeters of all projections through acoustical partitions such as from pipes and conduits. Seal perimeters of all frames and other items set into acoustical gypsum board installations. Seal in back of all control joints in acoustical gypsum board installations. Also, coordinate acoustical sealant of drywall penetrations with Electrical, Plumbing and HVAC sections.

AUXILIARY MATERIALS

MATERIALS

Steel drill screws must comply with ASTM C 1002 for fastening gypsum board to steel members less than 0.033 inch thick and for fastening gypsum board to gypsum board. Use appropriate size screws for the thickness of the drywall to be installed.

Steel drill screws must comply with ASTM C 954 for fastening gypsum board to steel members from 0.033 to 0.112 inch thick.

Use steel drill screws of type and size recommended by panel manufacturer for fastening cementitious backerboard.

Special laminating adhesive or joint compound recommended for laminating gypsum board panels.

Spot Grout must comply with ASTM C 475 and be setting-type joint compound recommended for spot-grouting hollow metal door frames.

Drywall screws are recommended over drywall nails because they provide better holding power, minimize popping and help prevent damage to the panel.